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SLIDES: Water Leasing in the Lower Arkansas Valley: The "Super Ditch Company"

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Water Leasing in the Lower Arkansas Valley: the "Super Ditch Company"

CU NRLC

Western Water Law, Policy and Management

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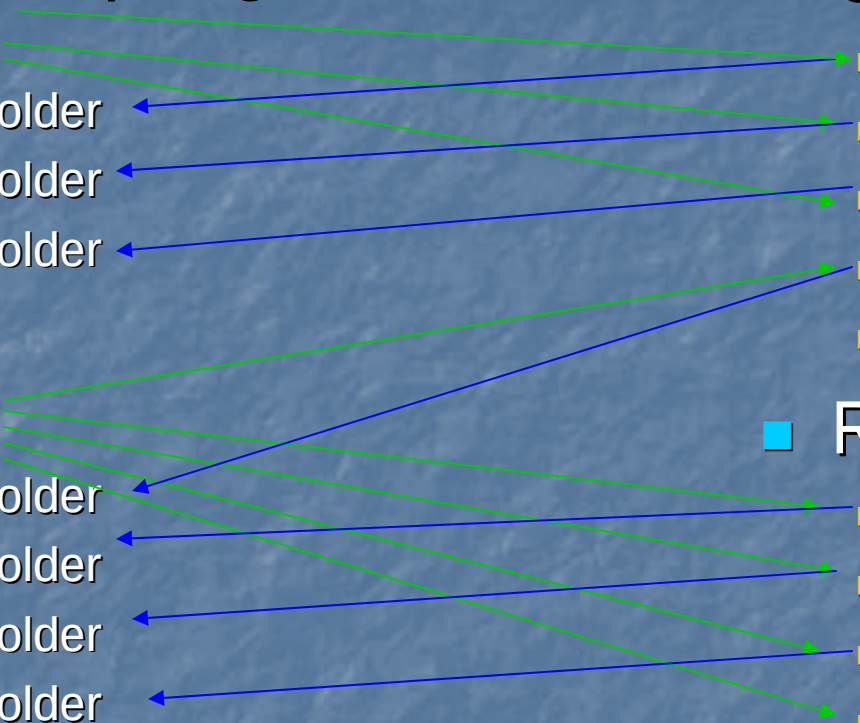
Historical Buy and Dry-up

- Colorado Springs
  - $$$$$$
  - Share Holder
  - Share Holder
  - Share Holder
- Aurora
  - $$$$$$
  - Share Holder
  - Share Holder
  - Share Holder
  - Share Holder
- Others
  - PBWW
  - Pueblo West
  - Fountain
  - Etc.



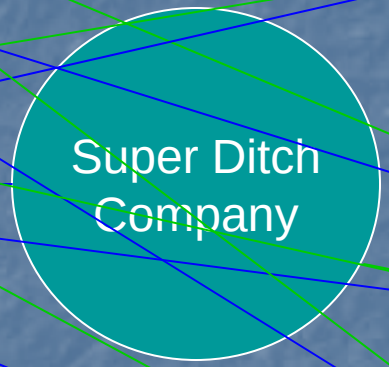
- Colorado Canal
  - Share Holder
  - Share Holder
  - Share Holder
  - Share Holder
  - Share Holder
- Rocky Ford Canal
  - Share Holder
  - Share Holder
  - Share Holder
  - Share Holder
  - Share Holder
- Others
  - Las Animas
  - Highline
  - Holsom

Historical Buy and Dry-up

- One time deal
  - Shareholders are paid off and water is transferred to municipal use
- Land permanently dried up
  - No more irrigation
  - Limited/no further agricultural productivity
  - Weed and erosion problems occur despite revegetation statute
- Cities (purchasers) realize the appreciating value of the water

Water Leasing

- Colorado Springs
  - $$$$$$
  - H_2O
- PPRWA
  - $$$$$$
  - H_2O
- CDOW/Parks
  - $$$$$$
  - H_2O
- Other/Ag
  - $$$$$$
  - H_2O



- Ft. Lyon
  - Share Holder
  - Share Holder
  - Share Holder
- Rocky Ford Highline
  - Share Holder
  - Share Holder
  - Share Holder
- Catlin Canal
  - Share Holder
  - Share Holder
  - Share Holder

Water Leasing

- Creates new crop - water
  - Predictable source of revenue for farmers and ranchers
- Annual, multi-year short and long-term leases
- Land not permanently dried up
  - Agricultural productivity continues long-term
  - Most water remains in irrigation use every year
  - Community/economic activity continues
- Shareholders realize the appreciating value of the water

What water leasing must do to succeed

- Maximize the short- and long-term value of irrigation water to the Lower Valley
  - For cities, provide a reliable, cost-competitive alternative source of water
  - For irrigators, provide an economically attractive alternative to farming or selling

“Super Ditch Company”

- Mechanism to lease water from irrigators who are willing to forgo irrigation to municipalities and other users
- Created, Controlled and Owned by participating irrigators
  - Managed by Board of Directors elected by participating irrigators
  - Collective negotiation levels playing field with municipal users
  - Irrigators may participate to extent they wish
  - All irrigators treated equally
    - % non-irrigated, lease revenue / ac-ft
- Responsible for leasing water, obtaining water court approval, administering leases, and 1041 permits
- Determine which lands will not be irrigated each year based on supply, lease demand, and hydrology

Cooperation increases bargaining power -- higher lease prices

	Individual, one-to-one transactions	Rocky Ford Highline and Fort Lyons work	Rocky Ford Highline, Fort Lyons, and Bessemver	The four ditch companies work cooperatively
Total discounted revenues over the hydrologic period 1976-2004 (million)				
Revenue from individual one-to-one transactions with incrementally higher prices:				
Rocky Ford Highline	$1.10	$1.20	$1.26	$1.35
Fort Lyons	$2.35	$2.94	$3.33	$3.92
Bessemer	$0.86	$0.86	$0.95	$1.00
Catlin	$1.21	$1.21	$1.21	$2.02
Benefit of additional operational efficiencies				
Additional revenues to be allocated among cooperators	$0.00	$0.18	$0.35	$0.52
Total lease revenues	$5.53	$6.39	$7.10	$8.81
% revenue increase resulting from cooperation		15.5%	28.3%	59.4%

Lower Arkansas Valley Super Ditch Company, Inc.

- Incorporated May 7, 2008
- Shareholders from all 7 primary ditches
- Invited potential lessees to get acquainted meetings in June and July, 2008
- Negotiating since with priority lessees
  - Terms & conditions, incl. water delivery
  - Expect to sign 2 or 3 leases in 2009
  - Expect to file water court applications in 2009
  - Expect to deliver water in 2010
- Operating with support of LAVWCD
  - Formal contract re: support, independence

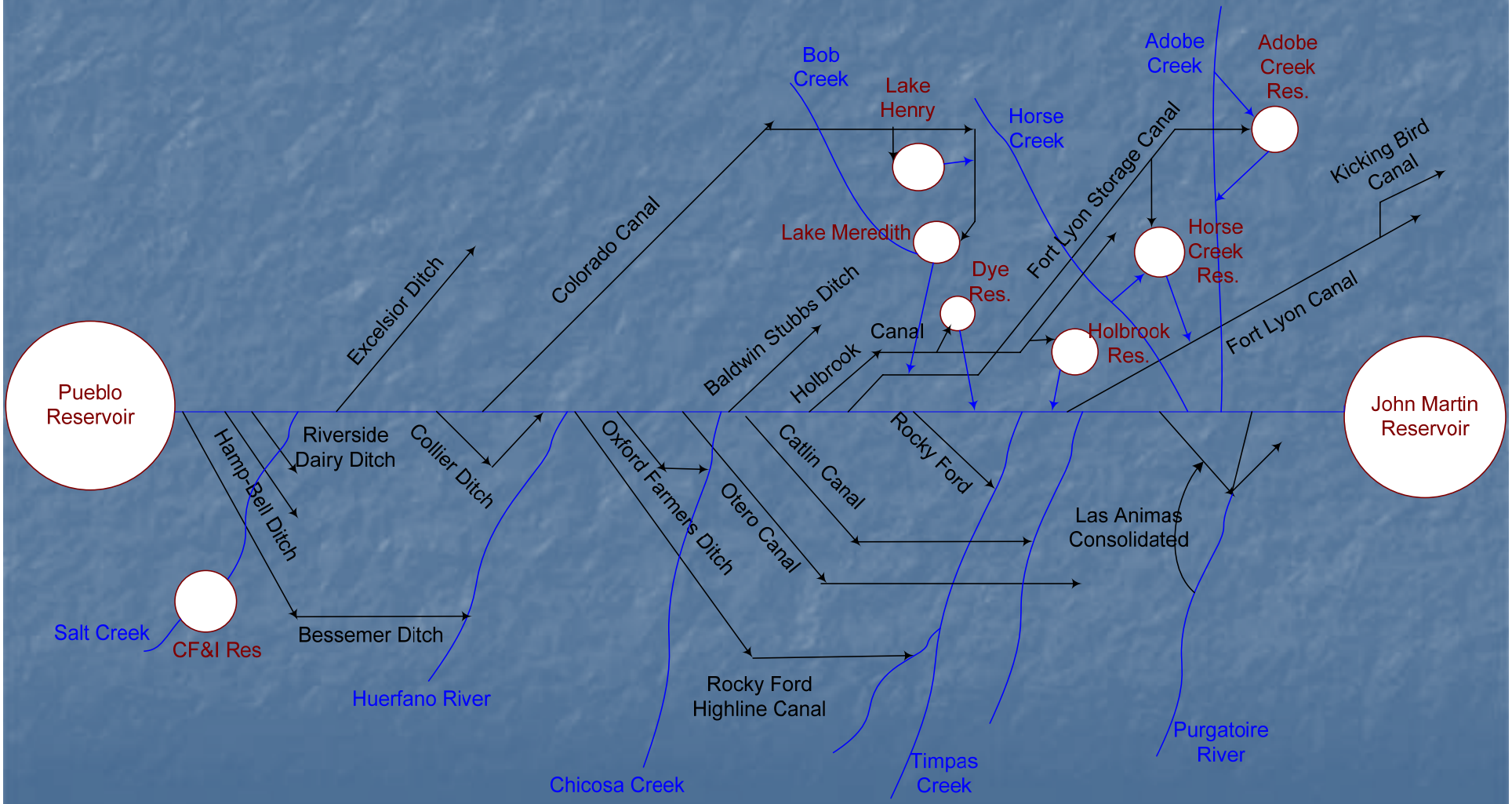
LAVWCD Groundwork

- Feasibility study (pot'l irrigation water for lease)
- Demand for water (lease market)
- Existing and needed storage and conveyance
- Water quality
- Farm and regional economics

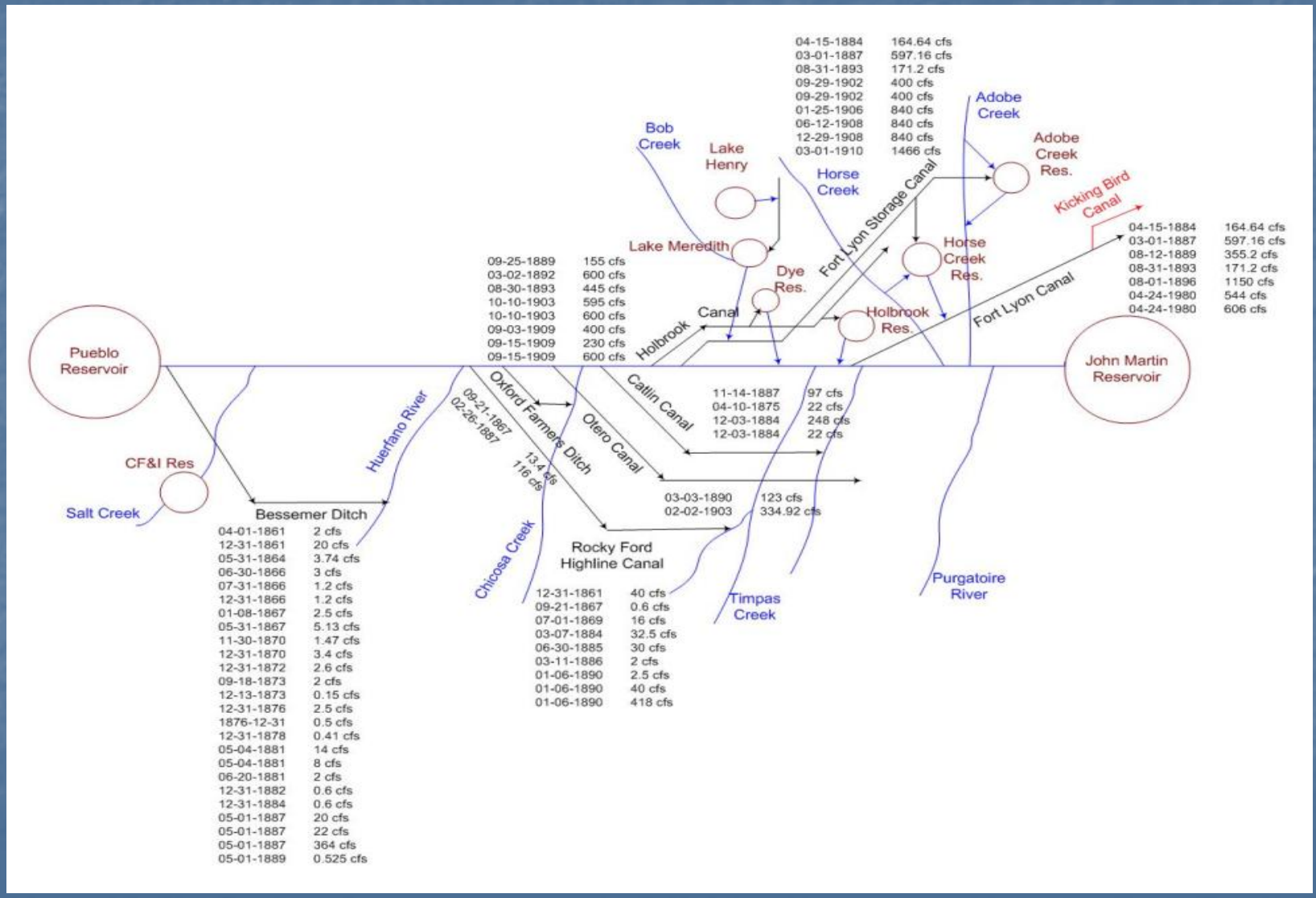
- Alternative legal structures for Super Ditch Co.
- Ditch company restrictions on participation
- "1041" permitting requirements
- Anti-trust issues
- Taxation of lease revenues

Primary Ditch Systems within Area of Interest

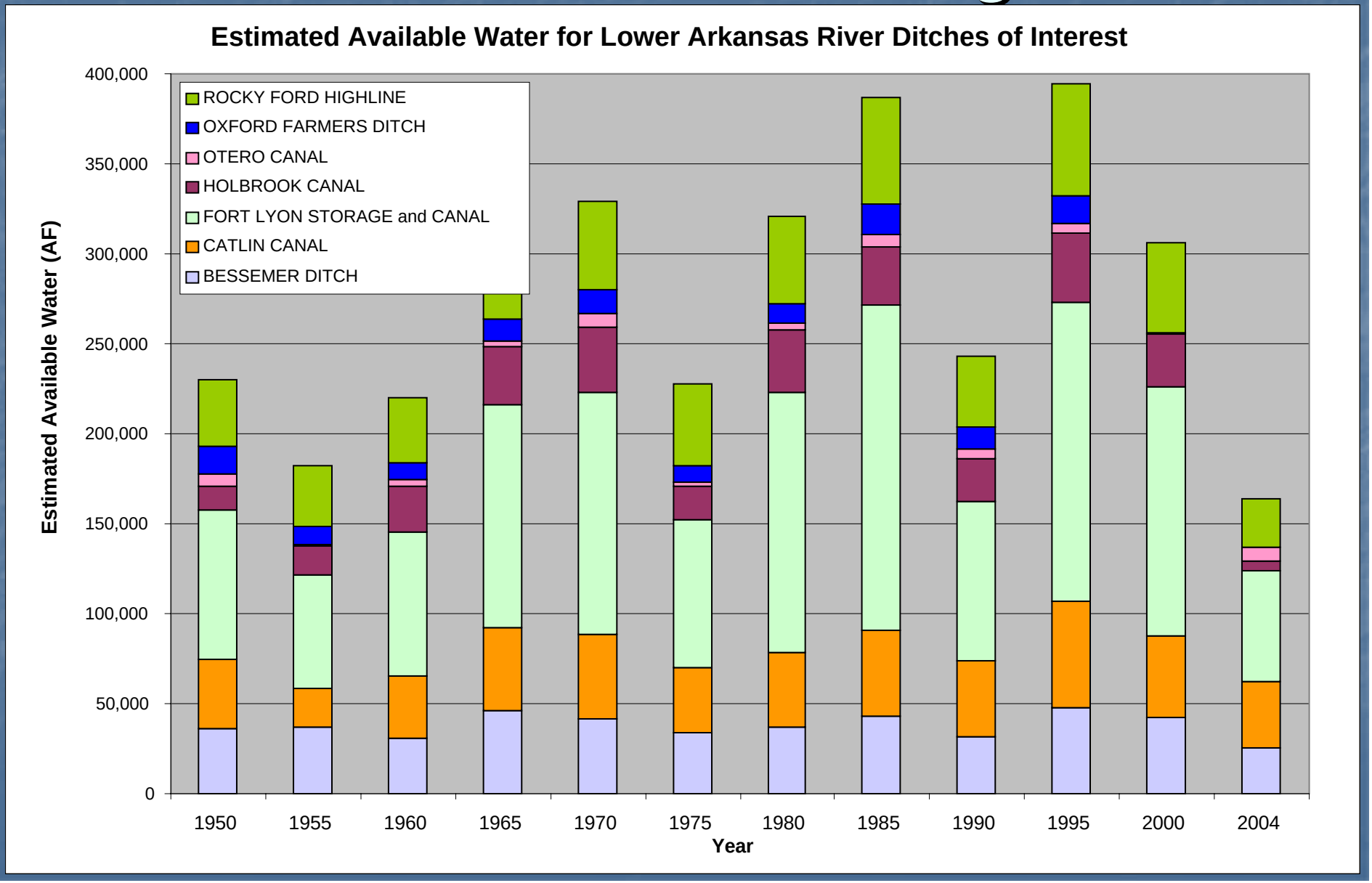
Arkansas River Ditch System Schematic



Ditch Rights within Area of Interest



Ditch Yields at Headgate



Summary of Total Yields at Headgate

Condition	**AF/Yr**
Wet Year	329,000
Average Year	255,000
Dry Year	192,000
Extreme Dry Year (2002)	93,000

Potential water volumes
(65% participation / 25% fallowing)

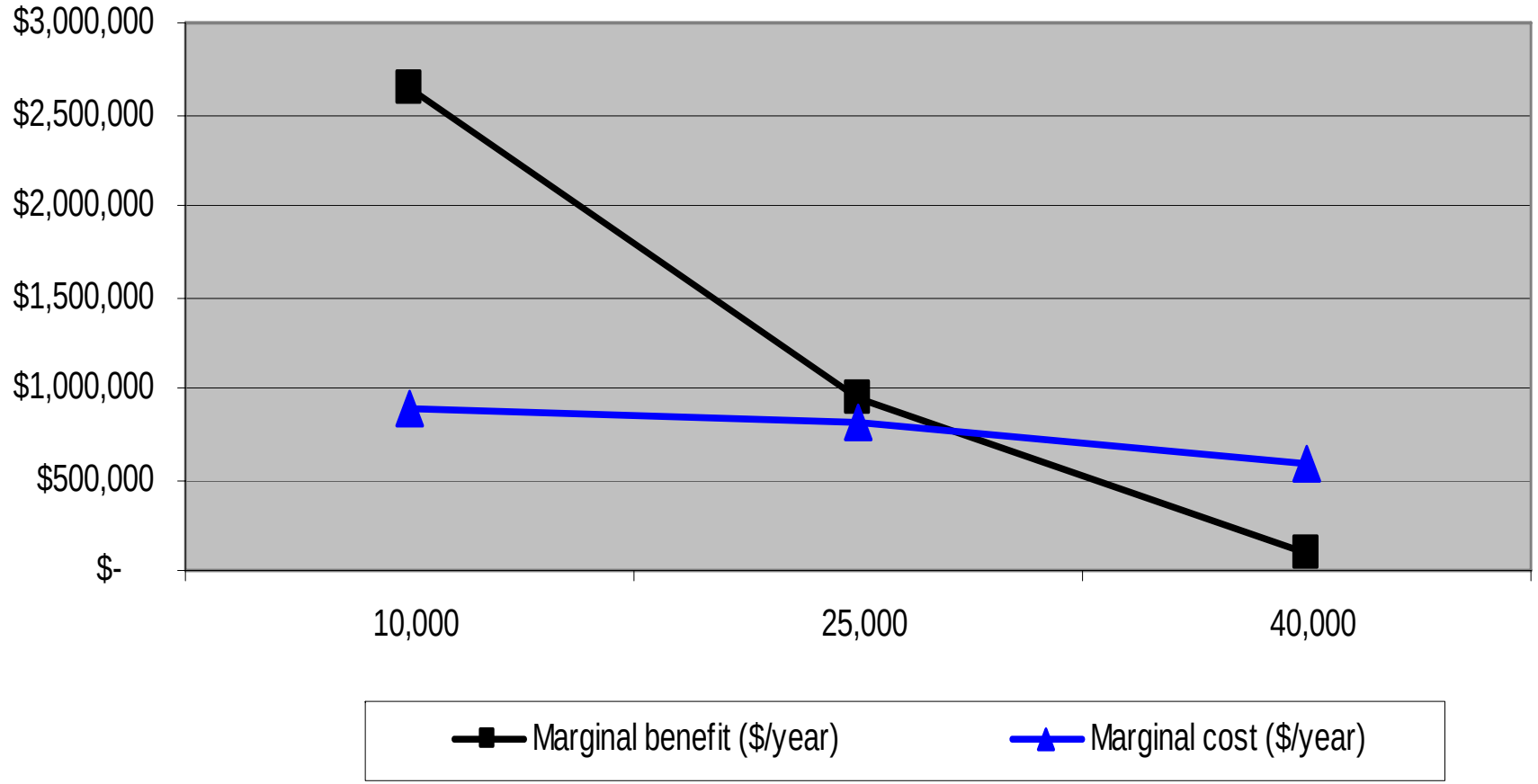
- Assumed average participation rate: 65%
  - Will be different for each ditch based on shareholder interest
- Assumed long-term fallowing rate: 25%
  - Rotational, long-term or combination
- Assuming no leased water storage:

Market	Tier Volume	Total Volume Available	Reliability
Dry Year	14,020 AF	14,020 AF	Very Reliable
Average Year	14,609 AF	28,629 AF	Full delivery in 16 of 29 years; deliveries made in 27 of 29 years
Wet Year	16,787 AF	45,417 AF	Inconsistent, but deliveries will occur

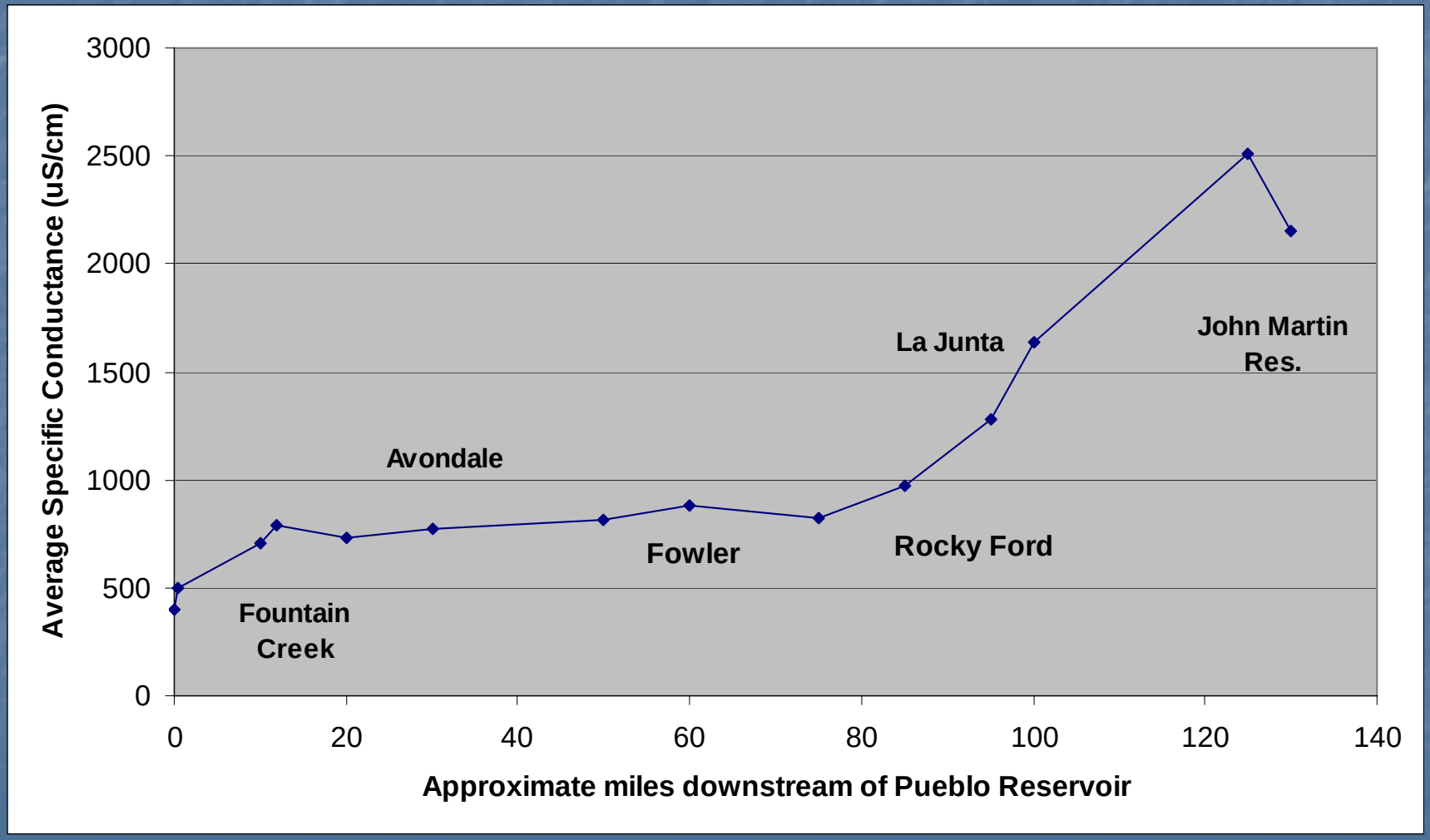
Delivering Leased Water

- Lessees take delivery in Pueblo Reservoir
  - Lessees deliver via existing infrastructure, e.g., Otero Pipeline (Colo Sgps, Aurora)
  - Lessees deliver to Northeastern El Paso County via new pipeline, e.g., Colo Spgs' proposed SDS
  - Some lessees deliver downstream

Marginal Analysis of Add'tl Storage
(for illustration)



Water Quality Diminishes Downstream



Issues to work through with potential irrigator-lessors

- Variation in yield and water value among ditches
  - More reliable, more easily delivered, and/or higher quality water is worth more to municipalities
- Delivery issues to irrigate land with reduced water flowing in ditches / laterals
- What land will be fallowed and when?
  - Whether irrigator can dry up some poor land long-term, or whether there must be rotational fallowing
- Farmer concern about diminished productivity after fallowing

Municipal Water Supply Considerations

- Increasingly limited opportunities for large new water projects and trans-basin projects
- “Buy and dry” increasingly culturally, socially, and politically unacceptable
- Leasing should become a favored alternative
  - Path of least resistance for cities
  - “Win-win” for cities *and* irrigators
  - Least environmental impact
  - Ag/commercial community benefits
  - Works well with conservation

Issues to work through with potential municipal lessees

- Deep-seated prejudice against non-permanent water supplies
  - See differently than Reclamation project leases
- Lease terms and conditions
  - Municipal demand(s)/need(s)
    - Delivery schedule(s)
      - Hydrological variability vs demands/needs
  - Basis of lease, e.g., consumptive use, ditch co shares, acres?
  - Reliability
  - Price / base / escalation
  - Payment terms
  - Length of lease(s)
  - Renewal rights
- Competition from non-participants, e.g., other municipalities who want to buy and dry

What's lease water worth?
One measure: avoided costs
$/AF/year

	Water	Infrastructure	Total
Colorado Springs Utilities, SDS		$1,200	$1,200
Pikes Peak Regional Water Authority	$500		$500
Aurora	$300		$300
Power generation	$300		$300
Windy Gap Firming Project	$500-$1,100		$500-$1,100
Reuter-Hess Reservoir (Parker)		$800	$800
Colorado-Big Thompson	$500		$500
Northern Integrated Storage Project		$510	$510
Denver Moffat System Expansion	$350		$350
ECCV/ACWWA/South Metro	$533	$750	$1,283
Aurora Prairie Waters		$1,200	$1,200

Hypothetical Purchase vs. Lease

Assumptions

Shares of Bessemer Ditch purchased (51%)		19,000
Average cost per share	$	10,000
"Real" rate of return on municipal investment (inflation-free)		3.00%
"Real" discount rate (inflation-free)		3.00%

Results (millions)

Case 1: Assuming City only needs additional water in dry years

Net discounted cost of buying shares	$	73.80
Net discounted cost of leasing water at $740/AF, reserving at $100/AF	$	36.80
Savings from Super Ditch Co. lease 2007-2086	*$*	*37.00*

Case 2: Assuming City needs water in dry years and 1,000+ AF in avg years

Net discounted cost of buying shares	$	61.26
Net discounted cost of leasing ($740 dry yr; $500 avg; $100 reservation price; $10 revenue from leasing unused water	$	46.91
Savings from Super Ditch Co. lease 2007-2086	*$*	*14.35*

Regional Economic Impacts

- Changes in spending by participating irrigators when fallowing
  - (seed, fertilizer sales; farm equipment repairs and sales; on-farm improvements, etc.)
- Impacts to industries and users of Lower Ark irrigated crops, e.g., local feedlots
- Impacts related to how and where water lease proceeds are spent

Economic Impact of Buy and Dry

- "Business as usual" thru 2030 (SWSI)
  - 78,000 acres dried up since 1950s (24%)
  - Add'l 22,000 to 72,000 acres by 2030 (47%)
- Economic value of Lower Ark irrigation
  - $430/ac/year (Thorvaldson *et al.*, CSU)
- $9.5 million to $31 million / year lost

Legal Issues Analyzed

- Alternative legal structures for company
- Taxation of lease revenues
- Anti-trust question
- Ditch company restrictions on participation
- County “1041” permitting requirements
- Water court change cases
  - By lease to address anti-speculation doctrine
  - Applications structured to allow leasing only (not buy-and-dry) to address “Trojan Horse” concern

Summary Water Leasing

- Advantages
  - Municipalities / other users get water they need at competitive cost
  - Irrigators realize current value of water w/o selling
    - Plus realize appreciating water value in future
    - Can continue farming and ranching
  - Supports long-term regional rural economy
- Challenges
  - Willingness of users to consider FMV water leases
  - Cooperation among ditch companies + shareholders
    - End municipal predation + manipulation
  - Delivery of water to lessees

Conclusion

- Simple idea, great potential, success depends upon willingness of users to adopt a new paradigm to meet future water needs
- Moving forward to make concept a reality
- Confident that challenges can be met